

October 7, 2002

MEMORANDUM TO: Richard Laufer, Section Chief
Project Directorate I
Division of Licensing and Project Management

FROM: F. Mark Reinhart, Section Chief **/RA/** P. Wilson for
Probabilistic Safety Assessment Branch
Division of Systems Safety and Analysis
Office of Nuclear Reactor Regulation

SUBJECT: EVALUATION OF THE RISK ASSESSMENT INFORMATION
PROVIDED BY BEAVER VALLEY POWER STATION IN SUPPORT OF
ITS REQUEST TO EXTEND THE COMPLETION TIME FOR ECCS
ACCUMULATORS FROM 1 HOUR TO 24 HOURS (TAC NO. MB4692
and MB4693)

The Probabilistic Safety Assessment Branch (SPSB) reviewed the risk assessment information submitted by Beaver Valley to support its request for extending the completion time (CT) for ECCS Accumulators from one hour to 24 hours (Condition B of TS 3.5.1, "Accumulators," and its associated Bases). The supporting analysis for the licensee's request is based on the Westinghouse Owners Group (WOG) Topical Report WCAP-1549-A, Revision 1 and its evaluation by the staff.

The plant-specific risk information, submitted for Beaver Valley in support of this license amendment application, was reviewed to ensure conformance to the referenced Topical Report and its evaluation by the staff. The staff concludes that the generic justification proposed in WCAP-1549-A for extending the accumulator CT can be used to justify the same relaxation in the Beaver Valley Technical Specifications. The SPSB input to the safety evaluation (SE) is attached. Should you have any questions, please contact Nick Saltos at 415-1072.

Attachment: As stated

cc. Daniel Collins

CONTACT: N. Saltos, SPSB/DSSA/NRR
415-1072

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CC: Daniel Collins

Accession#ML022800198

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OFFICE	SPSB	SPSB/SC
NAME	N. Saltos:nxh2	M. Reinhart / RA /P. Wilson
DATE	10/04/02	10/07/02

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EVALUATION OF THE RISK ASSESSMENT INFORMATION
PROVIDED BY THE BEAVER VALLEY LICENSEE IN
SUPPORT OF ITS REQUEST TO REVISE THE COMPLETION TIME FOR ECCS
ACCUMULATORS FROM 1 HOUR TO 24 HOURS WHEN AN ACCUMULATOR
IS OUT OF SERVICE FOR REASONS OTHER THAN
BORON CONCENTRATION BEING OUT OF TS LIMITS
(TAC NO. MB4692 and MB4693)

1.0 BACKGROUND AND PROPOSED TECHNICAL SPECIFICATION CHANGES

By letter dated March 14, 2002, First Energy Nuclear Operating Company (FENOC), the licensee for Beaver Valley Power Station (BVPS), submitted a license amendment application to revise the BVPS Technical Specifications (TS). The requested changes included a risk-informed revision to Condition B of TS 3.5.1, "Accumulators," and its associated Bases. This change would extend the completion time (CT) for one Emergency Core Cooling System (ECCS) accumulator from 1 hour to 24 hours when an accumulator is out of service for reasons other than boron concentration being out of limits. The proposed CT extension is requested because one hour is not a sufficient amount of time to correct accumulator mechanical problems or to restore parameters to within limits.

The supporting analysis for the licensee's request is based on the Westinghouse Owners Group (WOG) Topical Report WCAP-1549-A, "Risk-Informed Evaluation of an Extension to Accumulator Completion Times," Revision 1 submitted to the NRC on August 20, 1998. This Topical Report, which provides a generic justification encompassing all WOG plant units (including BVPS), was reviewed and approved by the staff in NRC letter dated February 19, 1999.

2.0 EVALUATION

As stated above, the requested changes to TS 3.5.1 include a risk-informed revision to Condition B, "Accumulators," and its associated Bases. The licensee indicates that the implementation of the proposed extension will relax an unnecessarily restrictive completion time for the accumulators and replace it with a time that provides a more reasonable opportunity to respond to the condition. The licensee's risk assessment is based on Topical Report WCAP-1549-A, Revision 1 and its evaluation by the staff. Therefore, the plant-specific risk information, submitted for Beaver Valley in support of this license amendment application, was reviewed to ensure conformance to the referenced Topical Report and the associated staff safety evaluation report (SER).

The NRC staff review of WCAP-1549-A concluded that the quality of the risk analysis performed in support of the proposed CT extension was comprehensive and reasonable and that Westinghouse used a generally conservative approach intended to encompass all of the various vintages of Westinghouse plants. For example, potential key contributors to the risk associated with the proposed change, such as loss-of-coolant accident (LOCA) initiating event frequencies and accumulator unavailability and success criteria, were evaluated and found to

be reasonable. The assessment is based on the three-tiered approach documented in RG 1.177.

The results of the risk analysis indicated that the proposed change would result in a small risk increase, as defined in the applicable Regulatory Guides (RGs) 1.174 "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis" and 1.177 "An approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications." The risks evaluated in WCAP-1549-A include changes in both core damage frequency (CDF) and large early release frequency (LERF) and the staff concluded that the results met the intent of the guidance provided in the applicable RGs 1.174 and 1.177 (Tier 1). Furthermore, the WCAP conclusions regarding the identification of potentially high risk configurations (Tier 2 of RG 1.177) and the need for a configuration risk management program (Tier 3 of RG 1.177) are applicable to Beaver Valley. The WCAP-1549-A report concludes that there is no need for any additional constraints or compensatory measures that, if implemented, would avoid or reduce the probability of a risk significant configuration. Regarding the configuration risk management program, the Maintenance Rule, 10 CFR 50.65(a)(4), requires that licensees assess the risk anytime maintenance is being considered on safety-related equipment. This requirement meets the Tier 3 objective of RG 1.177.

As suggested by the WCAP-1549-A Implementation Guidelines, the licensee provided an evaluation that demonstrated the applicability of the conclusions of the topical report to BVPS by comparing key parameters and assumptions used in both the Beaver Valley-specific and the WCAP generic risk analyses. This comparison concludes that (1) the plant-specific initiating event frequencies are smaller than the generic WCAP model frequencies, (2) the Beaver Valley model includes also depressurization and low pressure injection as alternate success paths for a small loss-of-coolant accident (LOCA) event, and (3) the accumulators are not taken out of service for testing or preventive maintenance and have not had to be taken out of service for any corrective maintenance during plant operation at power. The staff finds that the WCAP analysis envelops or is comparable to the analysis performed for Beaver Valley.

3.0 SUMMARY AND CONCLUSION

The staff reviewed the risk assessment information submitted by FENOC, the licensee for Beaver Valley, to support its risk-informed revision request to Condition B of TS 3.5.1, "Accumulators," and its associated Bases. The proposed change would extend the CT for one ECCS accumulator from 1 hour to 24 hours when an accumulator is out of service for reasons other than boron concentration being out of limits. The licensee's risk assessment is based on Topical Report WCAP-1549-A, Revision 1 and its evaluation by the staff. Therefore, the plant-specific risk information, submitted for Beaver Valley in support of this license amendment application, was reviewed to ensure conformance to the referenced Topical Report and the associated staff SER. The staff concludes that the generic justification proposed in WCAP-1549-A for extending the accumulator CT can be used to justify the same relaxation in the Beaver Valley Technical Specifications.